

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

HANS PETER WEITZEL, et al.

Serial No.: 10/596,266

Filed: June 7, 2006

For: USE OF BIOCIDE-CONTAINING, WATER-REDISPERSIBLE POLYMER POWDER COMPOSITIONS IN MINERAL CONSTRUCTION MATERIALS

Attorney Docket No.: WAS 0768 PUSA

Group Art Unit: 1796

Examiner: Alexander C. Kollias

**DECLARATION OF DR. HANS PETER WEITZEL  
UNDER RULE 132**

Commissioner for Patents  
United States Patent and Trademark Office  
Washington, D.C. 20231

Sir:

I, Dr. Hans Peter Weitzel, do hereby declare and state as follows.

1. I am a co-inventor of the subject matter disclosed and claimed in U.S. application Serial No. 10/596,266, am familiar with the content of the application, the claims, the Office Action of June 12, 2009, and the references cited by the Patent Office.

2. The claimed invention incorporates biocidal actives in their "native" or "neat" form into redispersible polymer powder compositions. This incorporation is preferably achieved by spray drying an aqueous polymer dispersion also containing dispersed active.

3. The Weitzel published application 2003/0018121 A1 and the patent which issued therefrom, U.S. 6,740,692, does not disclose, teach, or suggest the claimed invention. The published application and patent (hereinafter, collectively, "*Weitzel*"), requires the use of cyclodextrin complexes of biocide(s), and directs the skilled artisan away from direct biocide incorporation into a redispersible polymer powder composition.

4. We have surprisingly and unexpectedly discovered that direct incorporation into the redispersible polymer powder composition is much more effective than when a biocide is directly added to a cementitious formulation as has been practiced for years to prevent microbial growth. This is shown by the inventive examples and comparative examples in the specification. The amounts of biocide added to the mineral building product formulations in the comparative examples are within the range commonly used by those skilled in the art to prevent microbial growth, amounts 10 to 20 times the amount of active used in the inventive examples. Yet, despite this much larger amount of biocide, microbial growth was observed after 9 months of exposure, where no microbial growth was observed for the subject invention examples, even after 12 months.

5. If less biocide had been used in the comparative example, greater microbial growth would have occurred. At the level used in the inventive examples, 10 to 20 times less than used in Comparative Example 4, the results would have been far worse if the biocide were added directly to the cement mixture. It is well known in the industry that much lower levels of biocides than used in Comparative Example 4 are ineffective in preventing microbial growth. There is no need for a "side-by-side" comparison, as termed by the Patent Examiner, since all skilled in the art know what the result would be.

6. The claims require that at least one biocidal additive "consist of" a bactericidal active, a fungicidal active, or an algicidal active. This corresponds to the written description of the invention in the specification, and is the method used in the inventive examples.

The term "active" as used in the art refers to the active ingredient itself. For example, a cyclodextrin/fungicide complex as disclosed by *Weitzel* is not an "active". The "active" is the fungicide, not its cyclodextrin complex. While the cyclodextrin complex may have biocidal activity, it is not the "active". The fungicide itself is the "active". This is how one skilled in the art views this term. By the same token, the encapsulated biocides of *Botts* for his totally different and irrelevant use in the field of agriculture, are not "actives". They are encapsulated "actives". The claims require that the additives "consist of" the actives, thus precluding complexed or encapsulated biocides. Of course, the latter may be added to the

formulation, but only as a separate, optional ingredient, which is not preferred due both to the expense of preparing complexed or encapsulated biocides, as well as to the fact that the claimed compositions containing uncomplexed and non-encapsulated biocides have proven so surprisingly and unexpectedly effective that no additional biocide is required, in any form.

7. We prepared additional redispersible polymer powder compositions containing biocide, in accordance with the claimed invention. These examples are set forth below as Examples 5-7:

**Example 5:**

A polyvinyl alcohol-stabilized dispersion of a copolymer of vinyl acetate and ethylene having a glass transition temperature of -7°C is admixed with 10 parts (solid/solid) of a polyvinyl alcohol having a degree of hydrolysis of 88 mol% and a Höppler viscosity of 4 mPas and adjusted to a solids content of 35%. N-Octylisothiazolinone (in the form of Acticide OTW) is added to this dispersion in an amount corresponding to an active compound content of 750 ppm based on powder and the dispersion is spray dried.

**Example 6:**

A polyvinyl alcohol-stabilized dispersion of a copolymer of vinyl chloride, vinyl laurate, and ethylene having a glass transition temperature of +1°C is admixed with 10 parts (solid/solid) of a polyvinyl alcohol having a degree of hydrolysis of 88 mol% and a Höppler viscosity of 4 mPas and adjusted to a solids content of 35%. N-Octylisothiazolinone (in the form of Acticide OTW) is added to this dispersion in an amount corresponding to an active compound content of 750 ppm based on powder and the dispersion is spray dried.

**Example 7:**

A polyvinyl alcohol-stabilized dispersion of a homopolymer of vinyl acetate having a glass transition temperature of +30°C is admixed with 10 parts (solid/solid) of a polyvinyl alcohol having a degree of hydrolysis of 88 mol% and a Höppler viscosity of 4 mPas and adjusted to a solids content of 35%. N-Octylisothiazolinone (in the form of Acticide OTW) is added to this dispersion in an amount corresponding to an active compound content of 750 ppm based on powder and the dispersion is spray dried.

In these redispersible polymer powder compositions, microbial growth is eliminated to the same extent as in the subject invention examples in the specification. The actual redispersible polymer powder itself makes no difference to the effectiveness of the claimed compositions, as the polymer powder *per se* does not have any biocidal effect. Therefore, any redispersible polymer powder composition within the scope of the claims will exhibit similar properties with respect to microbial growth.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.



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Dr. Hans Peter Weitzel

Dated: 08.09.2009